

WHAT IS CLAIMED IS:

1. A method of re-establishing a connection between a radio network node and a core network having a control plane entity and a user plane entity in a communication network, comprising the steps of:

5 sending, by the control-plane entity to a user-plane entity, an event in accordance with a media gateway control protocol, wherein the event orders the user-plane entity to notify the control-plane entity when user-plane traffic is received from another network node;

10 releasing the connection between the radio network node and the user-plane entity;

 receiving user-plane traffic at the user-plane entity and in response notifying the control-plane entity of this receipt; and

 re-establishing the connection between the radio network node and the user-plane entity.

15 2. The method of claim 1, further comprising the step of forwarding the received user-plane traffic from the user-plane entity towards the radio network node after the connection has been re-established.

 3. The method of claim 1, wherein the connection is re-established in response to an order by the control-plane entity.

20 4. The method of claim 1, wherein the communication network provides general packet radio service.

 5. A method of detecting a faulty path in a communication network having a control-plane entity and a user-plane entity, comprising the steps of:

25 sending, from the control-plane entity to the user-plane entity, an event in accordance with a media gateway control protocol, wherein the event orders the user-plane entity to notify the control-plane entity when the user-plane entity discovers a faulty path;

 sending at least one heartbeat message through the path;

30 determining whether a heartbeat acknowledgment message has been received through the path; and

 if a heartbeat acknowledgment message has not been received, notifying the control-plane entity of the faulty path.

6. The method of claim 5, further comprising the step of sending, from the control-plane entity to the user-plane entity, a signal in accordance with the media gateway control protocol, wherein the signal orders the user-plane entity to send heartbeat messages through the path.

5 7. The method of claim 5, wherein the communication network provides general packet radio service.

8. The method of claim 5, wherein the communication network is a circuit-switched network using packet bearers.

10 9. A method of detecting a re-started user-plane peer in a communication network having a control-plane entity and a user-plane entity, comprising the steps of:
sending, from the control-plane entity to the user-plane entity, an event in accordance with a media gateway control protocol, wherein the event orders the user-plane entity to notify the control-plane entity when the user-plane entity discovers a re-started user-plane peer;

15 sending successive heartbeat messages to a user-plane peer;
receiving successive heartbeat acknowledgment messages from the user-plane peer, wherein the heartbeat acknowledgment messages include re-start counter values;

comparing re-start counter values of successive pairs of received heartbeat acknowledgment messages from a user-plane peer; and

20 if the comparison indicates that the user-plane peer has been re-started, notifying the control-plane entity of the re-started user-plane peer.

25 10. The method of claim 9, further comprising the step of sending, from the control-plane entity to the user-plane entity, a signal in accordance with the media gateway control protocol, wherein the signal orders the user-plane entity to send heartbeat messages to the user-plane peer.

11. The method of claim 9, wherein the communication network provides general packet radio service.

12. The method of claim 9, wherein the communication network is a circuit-switched network using packet bearers.